

CLAIMS

1. A surgical drain tube with flow control safeguards comprising:
 - 5 a length of tubing having at least one lumen extending therethrough and having a patient end configured to be joined to a wound drain catheter and a device end configured to be connected to a collection device and; a vacuum relief valve having one end in fluid communication with the lumen of the tubing and one end in fluid communication with a fluid source.
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2. A surgical drain tube as defined in Claim 1 wherein:
the vacuum relief valve is configured to open when a predetermined level of vacuum is reached in the lumen of the drain tube.
- 15 3. A surgical drain tube as defined in Claim 2 wherein:
the vacuum relief valve is configured to open when vacuum in the lumen of the tubing is approximately seventy (70) centimeters of H₂O.
- 20 4. A surgical drain tube as defined in Claim 2 wherein:
the vacuum relief valve further comprises a piston for closing and opening an orifice and the piston is biased in the closed position by a spring calibrated to permit opening at the pre-determined vacuum level.
- 25 5. A surgical drain tube as defined in Claim 1 wherein:
the end of the vacuum relief valve open to a source of fluid is open to atmospheric pressure.

6. A surgical drain tube with flow control safeguards comprising:
 - a length of tubing having at least one lumen extending therethrough and having a patient end configured to be joined to a wound drain catheter and a device end configured to be connected to a collection device and;
 - 5 an inline anti-reflux valve configured as a check valve to ensure fluid flow through the lumen of the tube in only one direction.
7. A surgical drain tube as defined in Claim 6 wherein the anti-reflux valve is configured to permit fluid flow only away from the patient end of the tubing and prevent flow back to the patient.
- 10 8. A surgical drain tube with flow control safeguards comprising:
 - a length of tubing having at least one lumen extending therethrough and a patient end configured to join to a drainage catheter and a device end configured to join to a perioperative autotransfusion system;
 - 15 a vacuum relief valve joined to the tubing and having one end in fluid communication with the lumen and;
 - an inline anti-reflux valve configured to permit fluid flow through the lumen only in the direction leading away to the patient.
- 20 9. A surgical drain tube as defined in Claim 8 wherein the patient end of the tubing is securable only to the drainage catheter and the device end of the tubing is securable only to the autotransfusion device such that the ends cannot be inadvertently connected in reverse.
- 25 10. A method of controlling flow through a surgical drain tube in a post-operative environment comprising:
 - providing a drain tube having a lumen extending therethrough, a patient end configured to be joined to a drainage catheter, a device end configured to be

joined to a collection device, and an inline anti-reflux valve configured to permit fluid flow through the lumen only in a direction leading away from the patient;

5 securing the patient end of the tube to a drainage catheter placed in a surgical site of the patient and joining the device end of the tube to a collection device and;

operating the collection device to apply suction through the lumen of the tube to cause flow from the patient to the collection device.

10 11. A method of controlling flow through a surgical drain tube as defined in claim 10 wherein the tube further comprises a vacuum relief valve having one end in fluid communication with the lumen of the tubing and another end in fluid communication with a source of fluid and being configured to open to the source of fluid when a pre-determined vacuum level is reached in the lumen of the tube.

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